UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/501,621	02/09/2000	Randell L. Mills	8AC4-DIV1	4145

20736 7590 10/06/2004

MANELLI DENISON & SELTER
2000 M STREET NW SUITE 700
WASHINGTON, DC 20036-3307

EXAMINER	
KALAFUT, STEPHEN J	

ART UNIT	PAPER NUMBER
1745	

DATE MAILED: 10/06/2004

26

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/501,621	MILLS, RANDELL L.	
	Examiner	Art Unit	
	Stephen J. Kalafut	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 March 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-272* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-272* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claims 1-272, for reasons of record, are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility. See paper nos. 3 and 11.

Claims 1-272, for reasons of record, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.
See paper nos. 3 and 11.

Applicant's arguments filed 3/31/2003 have been fully considered but they are not persuasive.

Applicant alleges that the various test results, as listed in the paper of 3/31/03 give support for his contention that hydrogen can exist in states lower than the "ground state", where the electron of the hydrogen atom has a fractional, rather than an integer, quantum number. These results are not seen as supporting applicant's contention, for the following reasons:
1) They have not been peer reviewed, or published, but only submitted, so they do not (yet) have the credibility that peer reviewed articles have. To this category belong attachments 57, 58, 60-68, 70-82 and 85.
2) They speculate hydrino formation as an explanation for experimental data unrelated to and not necessarily caused by hydrinos, such Balmer line broadening, calorimetric data, an allegedly "anomalous" afterglow, or unfounded "indications" of hydride chemical bonding. To this

category belong attachments 60-64, 69, 72, 74-77 and 82. Besides the above-mentioned reasons for Balmer line broadening, other reasons are mentioned in the attached Appendix, on page 5.

3) They show data not accounted for by applicant's theory. To this category belong attachments 57, 60, 63, 67, 70, 71, 73, 75, 76, 78, 79 and 81. Applicant states, on page 5 of the present specification, that the energy states for a hydrogen atom are represented by the formula $E = -13.6 / (1/p)^2$ eV, where p is an integer, and E is the binding energy of the electron. When p=1, the hydrogen is in its "ground state". When p is 2 or more, hydrogen is allegedly in an energy state below the "ground state", such a hydrogen atom being called a "hydrino". By setting p equal to the integers 1 through 5, the predicted energy values would be -13.6 (1) eV, -13.6 (4) eV, -13.6 (9) eV, -13.6 (16) eV and -13.6 (25) eV. Applicant expresses these values in terms of a variable called q, so that for these five energy levels, q equals 1, 4, 9, 16 and 25. The differences between one level, corresponding to a given value of p, and the next level may be expressed as q equaling 3, 5, 7 and 9. Higher values of p would lead of further higher odd values of q (11, 13, etc.). The differences between two energy levels, corresponding to a difference in p of 2, may be expressed as q equaling 8, 12 and 16. A value of 4 would be possible, going from p being zero, which would represent an unbound electron, to p being 2. Thus, applicant's formula predicts emissions of energy corresponding to values of q equaling 1, 3, 4, 5, 7, 8, 9, 11, 12, 13, 15 and 16. The cited data, however, shows q equaling 1, 2, 3, 4, 6, 7, 8, 9 or 11. Looking only at the theoretical values of q up to 11, the data shows q equaling 2 and 6, which are precluded by applicant's formula, while omitting the predicted value of 5. It is also noted that applicant makes numerous references to q equaling 2 (i.e., 27.2 eV), a value which nowhere fits into his formula.

4) They refer to phenomena other than the "hydrino", such as energy states about n=1, or a criticism of work by Feynman, and thus, even if valid, do not deal with the present theory.
5) They are unrelated to the scientific merits of the present invention and only generally relate to news stories about the PTO and applicant's related applications. To this category belong attachments 83 and 84.
Since all the "evidence" presented in attachment 57-85 belongs to at least one of the categories (1) to (5) above, they are all deemed incredible, and hence, invalid as experimental proof for the existence of the hypothetical hydrino, or of any compound thereof.

Further evidence against applicant's hydrino theory is shown by the Internet pages by Krieg and Zimmerman. Krieg provides an analysis, using differential calculus, of how the conventionally accepted "ground state" of an electron is a minimum value for its energy. The calculated value of the orbital radius turns out to be the Bohr radius. Zimmerman shows how applicant's theory about the nature of an unbound electron, as found in his book *The Grand Unified Theory of Classical Quantum Mechanics*, starting on page 163, is incorrect. Applicant states that a free electron has the shape of a flat spinning disk, with its spin axis aligned with the direction of its motion. This implies that in an electron beam, pointed in a given direction, all of the electrons would have their axes pointed in that particular direction. In other words, all of the electrons would be polarized in the same direction. However, as Zimmerman explains, electron beams are normally randomly polarized. The implication from applicant's theory, however, is that randomly polarized electron beams cannot exist.

Further indication that applicant's theory is flawed is provided in the attached Appendix, starting at the bottom of page 5. Applicant, in his book, *The Grand Unified Theory of Classical*

Quantum Mechanics, has misunderstood that all stationary atomic states are non-radiative, why excited state radiate while the ground state does not, the fundamentals of quantum theory, Haus's non-radiative condition, the distinction between the quantum mechanics eigenfunction and wave function, the uncertainty principle, the concept of spin (which is a property of an electron *per se*, and not of its motion around the nucleus), the hydrogen electron wave function, and relativistic length contraction (also called Lorenz contraction).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Kalafut whose telephone number is 571-272-1286. The examiner can normally be reached on Mon-Fri 8:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sjk

STEPHEN KALAFUT
PRIMARY EXAMINER
GROUP 1700